

**Rocky Flats Citizens Advisory Board  
Meeting Minutes  
April 1, 2004  
6 to 9 p.m.  
College Hill Library, Room L268  
Front Range Community College, Westminster**

Victor Holm, the Board's chair, called the meeting to order at 6:00 p.m.

**BOARD / EX-OFFICIO MEMBERS PRESENT:** Suzanne Allen, Joe Downey, Anne Fenerty, Earl Gunia, Bill Kossack, Mary Mattson, Mike Maus, Bill McNeill, Sean Rea, Vanessa Safonovs, Phil Tomlinson / Rich Schassburger (DOE), Steve Gunderson (CDPHE).

**BOARD / EX-OFFICIO MEMBERS ABSENT:** Erin Hamby, Victor Holm, Andrew Ross / Mark Aguilar (EPA), Dean Rundle (USFWS)

**PUBLIC / OBSERVERS PRESENT:** Alan Trenary (Westminster resident), John Corsi (Kaiser-Hill), Ted Auker (Colorado Labor Trades Council), Randy Shannon (Arvada resident), Mel Shannon (Arvada resident), Rob Henneke (EPA), Bini Abbott (Arvada resident), Joan Seeman (citizen), John Boylan (Kaiser-Hill), Bob Prucha (Kaiser-Hill), Bob Nininger (Kaiser-Hill), Norma Castaneda (DOE), Bob Davis (Kaiser-Hill), Mike Fenerty (Boulder resident) / Ken Korkia (RFCAB staff), Patricia Rice (RFCAB staff)

**PUBLIC COMMENT / NEW BUSINESS:**

There was no public comment.

**New Business:**

During new business, the Board considered two letters. The first letter was addressed to Ray Plieness, who works for the Department of Energy Office of Legacy Management in Grand Junction, and asks that he designate someone from the Office of Legacy Management to serve as an ex-officio representative on the Board. The second letter was addressed to Jacques Brever, a former site worker and whistleblower who testified about environmental contamination to the Rocky Flats federal grand jury in the early 1990s. Ms. Brever has recently contributed to a book about the federal grand jury, entitled "The Ambushed Grand Jury." The letter asks that Ms. Brever forward to the Board, as well as representatives from the Colorado Department of Public Health and Environment and the Environmental Protection Agency, any information she might have about unknown areas of contamination at the site. The Board approved the letter to Mr. Plieness with full consent, while the letter to Ms. Brever was approved with one member abstaining.

**PRESENTATION ON THE DRAFT INTERIM MEASURE/INTERIM REMEDIAL ACTION DOCUMENT FOR THE 903 PAD LIP AREA:**

Lane Butler of Kaiser-Hill gave a presentation on the Interim Measure/Interim Remedial Action (IM/IRA) for remediation of the area that includes the 903 Pad Outer Lip Area, the Windblown Area east of the 903 Pad Lip Area (also called the Americium Zone), 881 Hillside, Hazardous Waste Disposal Area, and the East Firing Range. The IM/IRA evaluates cleanup alternatives for these sites. Several other areas were examined in the IM/IRA but were found to require no further action. The project mainly involves removal of soil that contains plutonium contamination of more than 50 picocuries per gram on the surface in each of the above areas.

Lane said for the 903 Pad project, 32,000 tons of asphalt and plutonium-contaminated soils were dug up and shipped in 1,900 containers for off-site disposal. The average depth of excavation was 3.1 feet at the 903 Pad. The project was completed in 13 months.

Contamination at the 903 Pad resulted when several hundred drums, containing volatile organic compounds (VOCs) and plutonium-laced oils, corroded and the contents leaked into the soil. Contamination in the Lip Area, Americium Zone, 881 Hillside, Hazardous waste disposal area and East Firing Range happened in the late 1960s and early 1970s, when winds spread contamination from the 903 Pad southerly and easterly.

**ADMIN RECORD**

Lane said major findings of sampling and characterization of the Individual Hazardous Substance Sites (IHSSs) mentioned above show that there is no uranium in the surface soil above the wildlife refuge worker action level. That action level is based on chemicals or radionuclides presenting an excess lifetime cancer risk of one in a hundred thousand to a wildlife refuge worker. Other findings are that there are multiple exceedances of standards in the surface for plutonium and americium. For inorganic chemicals, there are no exceedances of chemical standards above the wildlife refuge worker action level but some exceedances of ecological program remediation goals (PRGs). For organic chemicals (those chemicals that are carbon-based), there are no exceedances above the wildlife refuge worker action level or the ecological program remediation goals. Lane said some of the ecological concerns will be addressed in the sitewide Comprehensive Risk Assessment. For the subsurface, there was only one location within the 903 Outer Lip Area that exceeded the wildlife refuge worker action level for plutonium and americium.

One of the major goals of remediating the soil is to protect surface water. Because plutonium attaches to soil particles, it can move downslope in a rainstorm toward Woman Creek and cause surface water to exceed standards. Lane said, however, only two samples at one surface water monitoring station, SW 027, in the area of the 903 Pad showed surface water to be in excess of the 0.15 picocuries per liter (pCi/l) standard set for Rocky Flats surface waters. These exceedances occurred in 1998 and in 2000. SW027 is a point of evaluation, which is different from a point of compliance. Exceedances at points of evaluation are not a violation of the state standard that would result in a monetary fine. Instead, when an exceedance occurs at a point of evaluation, the site must investigate the cause of the exceedance so that, hopefully, they can pinpoint its cause and develop a plan of action. The points of compliance occur just downstream of the final pond in each series that release water to the creeks that flow offsite. Other points of compliance are located along Indiana Street where surface water actually flows offsite. Any exceedance at a point of compliance is a violation of the state standard that could result in the site being fined.

All air monitoring results in 2002 on the perimeter of the site have been well below the 10-millirem (mrem) standard. Even when soil was disturbed during the 903 Pad cleanup, air monitoring results were below the standard.

The IM/IRA examines three alternatives for action in the IHSSs above: (1) no action; (2) soil removal to below 50 pCi/g in the Lip Area; and (3) soil removal to below 50 pCi/g in the Lip Area plus construction of an extension of the South Interceptor Ditch (SID). The chosen alternative is (2), which will cost about \$15 million, not including disposal of soil and waste. While extension of the SID would not cost that much more, the site believes such an action could temporarily increase surface water and air contamination, and also would disturb Prebles mouse habitat.

Lane said the Site had considered covering about 190 acres in the Americium Zone with soil to reduce the risk to a wildlife refuge worker. They decided against it because of the potential for ecological disruption and habitat destruction and because the cost outweighed the minimal risk reduction that would have resulted from the effort.

Lane said the work should be done by September. He said he does not think the project will require excavation deeper than 6 inches into the soil to remove contamination above 50 pCi/g. Dust control measures for the project include spraying the disturbed area with water and not operating in high winds. He also said erosion mats would be laid down on revegetated surfaces to control erosion. In answer to a question about soil vacuuming, Lane said the experimental technique for vacuuming soil was not as effective as excavation, though there are some areas that may benefit from it.

In answer to another question, Lane said chlorinated hydrocarbons underneath the 903 PAD area would be evaluated in the Groundwater Interim Measure/Interim Remedial Action (IM/IRA).

A concern was raised about lead and depleted uranium contamination in the Firing Range due to previous activities there. The Site is continuing to investigate, but it is Lane's belief that these contaminants will not present a threat to water quality so the contaminants may not require cleanup. One major consideration is whether remediation would cause damage to Preble's Mouse habitat.

**COMMENTS ON THE COMPREHENSIVE CONSERVATION PLAN / ENVIRONMENTAL IMPACT STATEMENT (CCP/EIS) FOR THE ROCKY FLATS NATIONAL WILDLIFE REFUGE:**

At its Committee Night on March 18, the Board discussed and developed a set of comments on the CCP/EIS document. This document outlines four proposed alternatives for future management of the Rocky Flats National Wildlife Refuge. During its discussions, the Board realized it did not have consensus on a preferred alternative. The main area of disagreement was whether there should be future public access to the refuge. There is a range of public access activities proposed within the alternatives, from very limited to quite extensive in terms of trail use by pedestrians, bicyclists and equestrians, public education and visitor resource centers.

In the set of comments considered for approval at this meeting, the Board states it does not have consensus on whether any of the four proposed alternatives – either A, B, C or D – is preferable. The members also state there is not consensus on whether there should be public access to the refuge. The Board does note, however, there are certain areas of agreement it has irrespective of whatever management alternative is chosen. These areas are summarized as follows:

- No dogs should be allowed on the refuge.
- If an alternative is chosen that allows public access, no motorized vehicles should be allowed except in public parking areas or for site maintenance.
- The Board supports ecological restoration of the site, especially the tall-grass prairie.
- The Board believes there should be a permanent and clearly demarcated boundary to prevent access to the DOE-retained portions of the site.
- It is important to preserve the history of ranching as part of the Rocky Flats story, but preservation of the actual ranching structures is less important.
- The Board does not believe that mining is a compatible land use for the refuge and supports the U.S. Fish and Wildlife position that no lands should be transferred into the refuge until mining issues are resolved.
- The Board supports development of a combined refuge interpretive center and museum, but does not agree on where it should be located.
- The Board supports an environmental education program about the site, but does not agree whether it should include access to the site.

During its deliberations on the CCP/EIS, the Board members participated in a survey about the management alternatives and other refuge related issues. They decided to include the survey summary as an attachment to the comments submitted to U.S. Fish and Wildlife, with a notation made that the comments in the summary are not meant as an official position of the Board, and are included for information purposes only.

The Board approved the set of comments by unanimous consent.

#### **EDUCATION SESSION ON GROUNDWATER AT ROCKY FLATS:**

John Boylan and Bob Prucha, both of Kaiser-Hill, gave a presentation on the groundwater at the Site. John said the shallow groundwater flow mimics the topography and flows generally from west to east. Groundwater flows in two aquifers – a shallow aquifer and a much deeper aquifer below the bedrock at Rocky Flats. Flow from the shallow aquifer on the site generally moves toward the drainages – Woman and North and South Walnut Creeks. All groundwater that is affected by site activities “daylights” to surface water or “seeps” before it leaves the site.

Major groundwater contaminants are volatile organic compounds (VOCs), uranium, and nitrates. Groundwater treatment will be discussed and analyzed in the Groundwater Interim Measure/Interim Remedial Action (IM/IRA), which is expected to be distributed for public comment soon.

The Rocky Flats Cleanup Agreement (RFCA), signed by the Department of Energy (DOE), U.S. Environmental Protection Agency (EPA), and the Colorado Department of Public Health and the Environment (CDPHE),

regulates groundwater at Rocky Flats. The main reason for groundwater remediation is to protect surface water quality and ecology.

Chemicals and radionuclides in groundwater are regulated in two levels, as per RFCA – Tier I and Tier II. These tiers are different for different chemicals and radionuclides in groundwater. If a contaminant is greater than its Tier II level, it will trigger additional monitoring. If the contaminant is found to be in greater quantities than its Tier I level, it will trigger an evaluation of a cleanup or other response action.

Groundwater monitoring is described in the Integrated Monitoring Plan (IMP), a document that has historically been changed once a year. More frequent changes to the IMP are envisioned as the site moves toward closure, however. Historically, there have been more than 1,400 groundwater monitoring wells. Currently, there are about 175 wells that are monitored per year. Chemicals of concern in groundwater are the volatile organic compounds (VOCs), metals, radionuclides, nitrates, nitrites, and field parameters (temperature, pH, conductivity, etc.).

Rocky Flats geology divides groundwater into two aquifers – a shallow one and a deep one. Bob said there is little chance that contamination in the shallow aquifer will seep through the bedrock into the deeper aquifer. The top geological layer at the site is Rocky Flats “alluvium.” Alluvium is the soil made up of rock material that is eroded from the mountains. It looks like dirt or sand. Underneath the alluvium is the shallow bedrock, made up of weathered bedrock and sandstone layers. Underneath that is unweathered bedrock.

Water for the shallow upper aquifer comes from several sources: rain or snow, surface inflow to the site, and leaks from water pipes. The Rocky Flats area of Colorado is semi-arid and averages about 15 inches a year of precipitation. Most rain or snow is lost to evapotranspiration and only 1 to 2 inches recharges the groundwater. Evapotranspiration occurs when water is taken up in plants and the water in the plants “transpires” through the leaves of the plant to the atmosphere.

Groundwater at the site percolates through the alluvial layers. When it hits the bedrock, it flows along the contour of the bedrock until it seeps out either onto the surface of the hillsides or into one of the creeks.

Bob said the shallow groundwater flow is slow and under the Industrial Area averages about 50 feet a year. Most chemicals move with the groundwater as either dissolved constituents (like salt in water) or particles (like sand in water). Chemical migration depends on the groundwater velocity, chemical properties and reactions with subsurface soil. Major contaminants in the groundwater at the site are chlorinated solvents, uranium, and nitrates.

Some of these chemicals, such as tetrachloroethene (PCE) degrade into other chemicals. PCE degrades into trichloroethene (TCE) and eventually into vinyl chloride. The site monitors the original contaminant chemicals and the “daughter” products. (A daughter product is the degradation product of the original contaminant.)

Major chemicals at the site are volatile organic compounds (VOCs), which include the chlorinated solvents, uranium and nitrates. There are analytical techniques to tell if the uranium is man-made vs. natural uranium. The major area of uranium and nitrate groundwater contamination is the Solar Ponds area.

The site has developed a model of VOC contaminant transport in the groundwater. It is being used to model potential groundwater and contaminant flow after closure of the site. This model will be used to model flow around the portions of buildings that will be left below ground, to help with the land configuration after closure, to support the Comprehensive Risk Assessment, and to develop the Groundwater Interim Measure/Interim Remedial Action (IM/IRA).

The model helps to detail where the “plumes” are for each contaminant and which areas may have to be remediated. Bob showed maps for the PCE, TCE and carbon tetrachloride (CCl<sub>4</sub>) plumes.

#### **PLANNING FOR UPCOMING MEETINGS:**

At its April 15 Committee Night, the Board will discuss and develop comments on the draft Interim Measure / Interim Remedial Action (IM/IRA) document for the 903 Pad Lip Area. They also will work on planning for two future public workshops they would like to sponsor. The first workshop relates to future public participation after the site is closed. The second workshop will seek to educate the public on the regulatory closure process the site

must undergo once cleanup work is complete and the site is delisted from Superfund. A final agenda topic for Committee Night will be to discuss items the members would like the Chair and Vice-Chair to raise at the Environmental Site Specific Advisory Board Chairs meeting that will be held in Washington, D.C. on April 21-22.

At the May 6 Board meeting, the agenda will include time for discussion and approval of whatever recommendation is developed related to the IM/IRA for the 903 Pad Lip Area. The major portion of the meeting will be dedicated to continuing Board education on groundwater issues at the site. Members will be asked to submit in advance of the meeting any outstanding questions or topics they would like to be addressed, so that they can be forwarded to presenters at the site for inclusion in their presentations. Staff will continue to monitor the progress of other site issues, including remediation proposals for the Original Landfill and surface water management, to see if they warrant inclusion on the May agenda.

#### **NEXT MEETING:**

**Date:** May 6, 6 to 9:00 p.m.

**Location:** College Hill Library, Room L211, Front Range Community College

**Agenda:**

- *Discussion and Approval of Recommendation on the Interim Measure / Interim Remedial Action Document for the 903 Pad Lip Area*

- *Part Two of Educational Presentation and Discussion on Groundwater Issues at Rocky Flats*

- *Update on the EMSSAB Chairs Meeting*

- *Presentation on the Pond Management and Land Configuration Environmental Assessment (tentative, depends on release date for the document)*

- *Presentation on the Interim Measure/Interim Remedial Action Document for the Original Landfill (tentative, depends on release date for the document)*

#### **MEETING ADJOURNED AT 9:00 p.m. \***

\* Taped transcript of full meeting is available in the RFCAB office.

RESPECTFULLY SUBMITTED:

Anne Fenerty, Secretary  
Rocky Flats Citizens Advisory Board

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The Rocky Flats Citizens Advisory Board is a community advisory group that reviews and provides recommendations on cleanup plans for Rocky Flats, a former nuclear weapons plant outside of Denver, Colorado.

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